DEPARTMENT OF THE ARMY TECHNICAL MANUAL

TM 11-809-20

DEPARTMENT OF THE AIR FORCE TECHNICAL ORDER

TO 31R2-2URT-124

ORGANIZATIONAL MAINTENANCE

RADIO TRANSMITTERS

T-368/URT, T-368A/URT T-368B/URT, AND T368C/URT AND ANTENNA TUNING UNIT BC-939-B

DEPARTMENTS OF THE ARMY AND THE AIR FORCE

JULY 1958

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WASHINGTON 25, D. C., *2 July 1958*

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*This technical manual supersedes so much of TM 11-809, 22 April 55, including C 1, 11 December 1956, C 2, 24 January 1957, C 3, 4 April 1957, and C 4, 8 May 1957 as pertains to organizational maintenance.

CHAPTER 1
INTRODUCTION

1. Scope

a. These instructions are published for the use of personnel responsible for organizational maintenance of Radio Transmitter T–368(*)/URT and Antenna Tuning Unit BC–939–B.

b. Two appendixes are included in these instructions:

Appendix I, References.

Appendix II, Maintenance Allocation Charts.

c. The repair parts and special tool list will be published as a separate technical manual.

d. Forward comments on this publication directly to Commanding Officer, United States Army Signal Publications Agency, Fort Monmouth, New Jersey.

2. Forms and Records

a. Unsatisfactory Equipment Reports.

(1) Fill out and forward DA Form 468 (Unsatisfactory Equipment Report), to Commanding Officer, United States Army Signal Equipment Support Agency, Fort Monmouth, New Jersey, as prescribed in AR 700–38.

(2) Fill out and forward AFTO Form 29 (Unsatisfactory Report), to Commander, Air Materiel Command, Wright-Patterson Air Force Base, Ohio, as prescribed in AF TO 00–35D–54.

b. Damaged or Improper Shipment. Fill out and forward DD Form 6 (Report of Damaged or Improper Shipment), as prescribed in AR 700–58 (Army) and AFR 71–4 (Air Force).

c. Preventive Maintenance Form. Prepare DA Form 11–238 (Maintenance Check List for Signal Equipment (Sound Equipment, Radio, Direction Finding, Radar, Carrier, Radiosonde and Television)) (figs. 7 and 8) in accordance with instructions on the form.

CHAPTER 2
INSTALLATION

3. Unpacking

a. Packaging Data. When packed for shipment, the transmitter components are placed in a wooden crate with a moisture-vaporproof barrier. Packing and packaging of a transmitter is shown in figure 1. The crate is 48 inches high, 39½ inches wide, and 36½ inches deep. The volume of the crate is 38 cubic feet. Running spares are packed in the crate with the transmitter. The weight of the crated equipment is 940 pounds.

b. Removing Contents. Select a location where the equipment may be unpacked without exposure to the elements, and which is convenient to the permanent or semipermanent installation of the equipment.

Caution: Be careful when uncrating, unpacking, and handling the equipment; it is easily damaged. If it is damaged or exposed, a complete overhaul may be required or the equipment may be rendered useless.

(1) Open the top and one side of the shipping crate. Use a nail puller to remove the nails that fasten the top and side. Do not attempt to pry the top and side off; the equipment may become damaged.

(2) Remove the equipment (still bolted to its wooden pallet) from the crate.

(3) Remove the moisture-vaporproof barrier and the bags that contain the desiccant.

(4) Cut the banding that holds the wadding to the equipment.

(5) Unfasten the equipment from the pallet by removing the nut and lockwasher that secure the base of the equipment to each bolt on the pallet.

(6) Lift the equipment off the pallet and place it near its final location.

(7) Replace the pallet and the attaching hardware in the shipping crate.

Note. Save the original packing case, the pallet, and the attaching hardware. They can be used again when the equipment is repacked for storage or shipment.

4. Checking Unpacked Equipment

a. Check the contents of the cartons against the master packing slip.

b. Inspect the equipment for possible damage (incurred during shipment), such as bent knobs and cracked or broken glass windows of the meters and frequency indicator dials.

c. Rotate the tuning controls and turn the switches to check for smoothness of movement. Binding or jamming indicates abnormal mechanical operation. Do not force the controls because this may cause permanent damage.

d. Remove the back panel by unfastening the 24 Dzus screws that hold it to the housing. Loosen the captive bolts at the front of each deck and pull the decks part way out.

e. Inspect the chassis and subchassis for broken or loose tubes and loose tube shields; see that all connectors are seated firmly. Push in and tighten the deck bolts and replace and secure the back panel.

f. Remove the 3 AMP and 6 AMP fuses on the power supply deck and see that they are the correct value. Be sure that the fuses are seated firmly after replacing them.

g. Make sure that the jumper plug (fig. 2) is seated firmly in its socket. Inspect the coaxial receptacles on the housing and on the radio-frequency (RF) deck for bent frames. See that the cable fittings are not bent.

h. Check the running spares for damages.

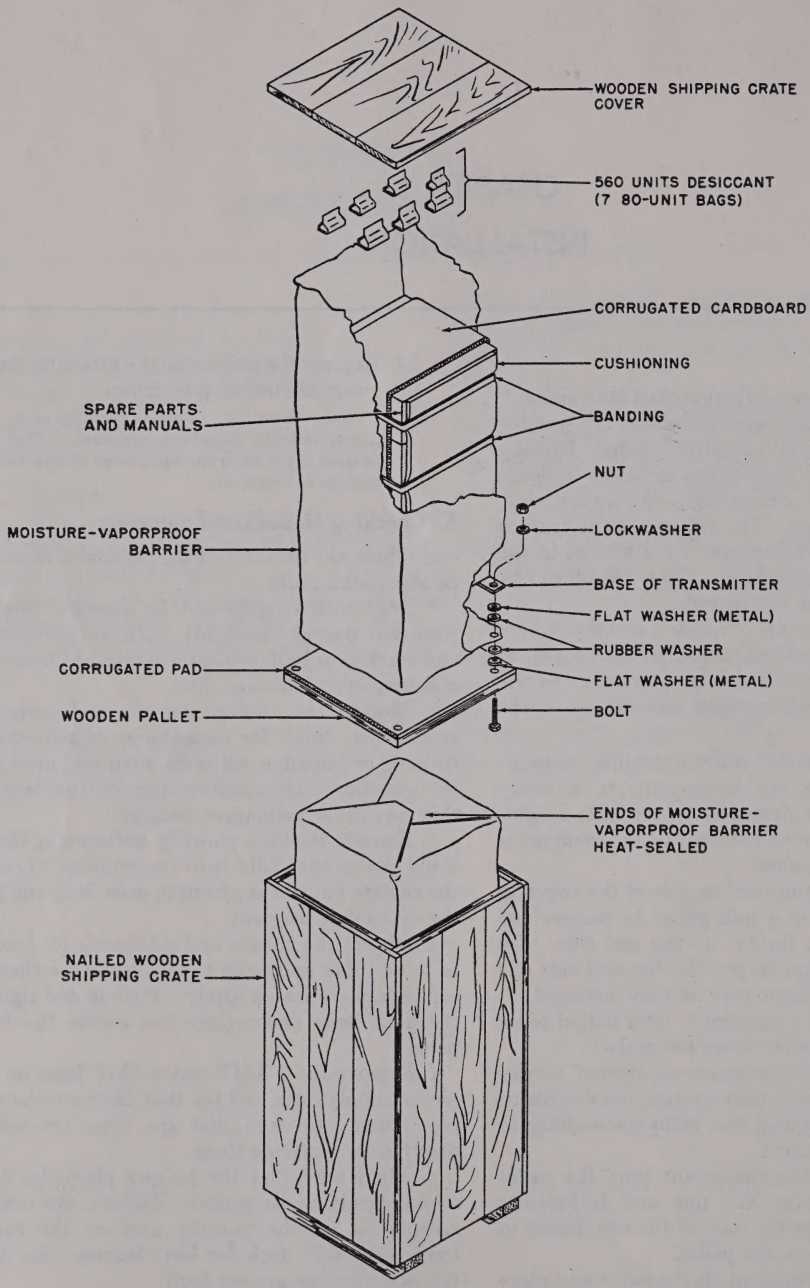


Figure 1. Packing and packaging of transmitter.

5. Shelter Requirements

The shelter housing for the transmitter must meet the following requirements:

a. The floor must be capable of supporting the weight of the equipment and of keeping the equipment in a level position.

b. Sufficient space must be available when repair work or withdrawal of any of the three decks is necessary. The transmitter should be so located that the power and signal cables are easily reached.

c. Adequate lighting for day and night operation must be provided. Position the transmitter so that the panel markings can be read easily by the operator.

6. Installation of Transmitter

The transmitter is shipped with all tubes and fuses in place.

a. For fixed station operation, the installation procedure consists of placing the transmitter in a suitable location (par. 5).

b. For mobile installation, the equipment must be bolted to the surface on which it is positioned. For this purpose, four holes are provided in the rectangular base. These holes are spaced 29 inches in length and 26⅞ inches in width (center to center). Use hexagonal head bolts, at least 2½ inches long, and ½-inch washers to fasten the transmitter to the surface. These bolts are not furnished.

7. Installation of Antenna Tuning Unit

a. When the tuning unit is unpacked, follow the checking procedures given in paragraph 4*a* through *c*.

b. Set the tuning unit on top of the transmitter and secure it to the transmitter with the four wing nuts (fig. 1 of TM 11–809–10).

8. Connections

(fig. 6 of TM 11–809–10 and fig. 2)

After installing the transmitter and antenna tuning unit, make the following connections. In several radio sets, such as Radio Sets AN/GLQ–2 and AN/GRC–26D, these connections (except for the handkey and carbon microphone) have been made by the manufacturer.

a. Power Input. Connect power Cord CD–763 between power receptacle J14 and the alternating-current (ac) line (115 volts, 50–60 cycles per second (cps), single phase).

b. CW Transmission. Connect the handkey to the key jack at the associated control box for the radio set.

c. AM Transmission. Connect the carbon microphone cable to CARBON MICROPHONE receptacle J11.

d. EXT EXC Transmission. Connect the external exciter output cable to EXT EXC receptacle J15.

e. FSK Transmission.

(1) In lettered models used with Radio Modulator MD–239/GR, check the two cables from the EXT EXC (J15) and FSK (J16) connectors of the transmitter to the MO IN and FSK OUT connectors of the modulator.

(2) When Radio Modulator MD–239/GR is not used, check the connection of the frequency-shift exciter cable to the FSK receptacle (J16).

f. FSK–AM Transmission. Make the checks in *d* and *e* (1) or (2) above.

g. Antenna.

(1) Connect the doublet antenna lead-in (if used) to the RF OUTPUT receptacle (J9).

(2) When the antenna tuning unit is used, connect:

(*a*) The coaxial cable between the RF OUTPUT receptacle (J9) and the input terminals on the side of the tuning unit.

(*b*) The lead from antenna to the antenna terminal at the rear of the tuning unit.

h. Associated Receiver. In an installation where an associated receiver uses the same antenna, check the connection at the RECEIVER receptacle (J10).

i. Jumper Plug. See that the jumper plug is inserted in J13 at the rear of the transmitter.

j. Remote Control Operation. In radio sets, a special purpose cable is usually supplied, but for

other installations when remote control is desired, a cable must be fabricated, to connect the remote control box to remote control receptacle J12 on the transmitter. The pins of J12 have the following functions:

(1) Remove control of the push-to-talk and key relay K2 by shorting pin A to pin E (ground). In lettered models, shorting pin A to pin E produces remote control of slow release relay K9 and performs the keying function.

(2) Remote control of high-voltage relay K6 by shorting pins B and C (115 volts ac).

(3) Remote control modulation by connecting a telephone to pins D and E.

(4) Remote control modulation by connecting a carbon mike to pins F and E.

(5) Monitoring of continuous-wave (cw) keying by connecting a headset between pins H and E.

(6) Disabling a receiver by shorting pin J to ground.

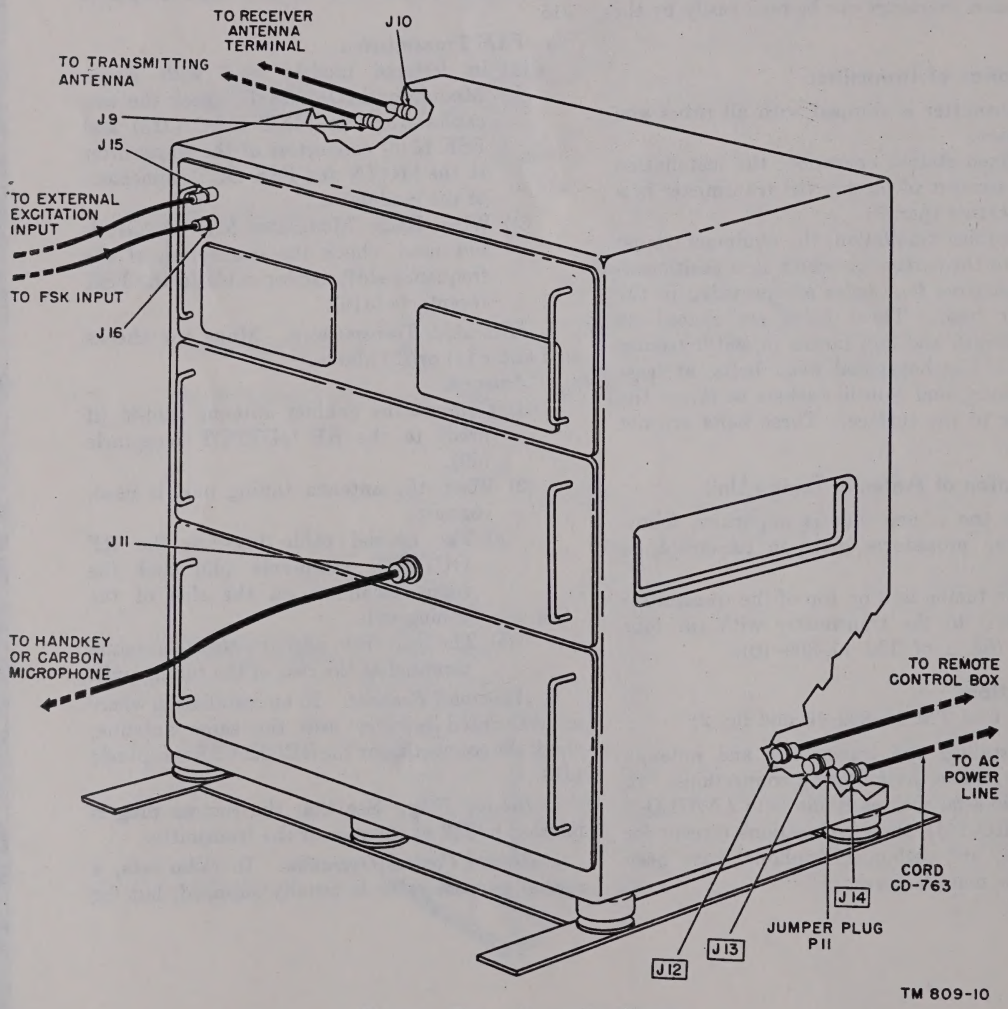


Figure 2. Transmitter cording diagram.

9. Use of Modified Antenna Tuning Unit
(fig. 3)

When it is desired to transmit on frequencies from 1.5 to 2 megacycles (mc) a modified tuning unit must be used. Figure 3 shows the circuit of a modified antenna tuning unit. In antenna tuning units so modified, it is not possible to operate with the range switch in the 10–20 M–C position. This range of frequencies can, however, be covered by use of a long-wire antenna (par. 17*f*(2) in TM 11–809–10).

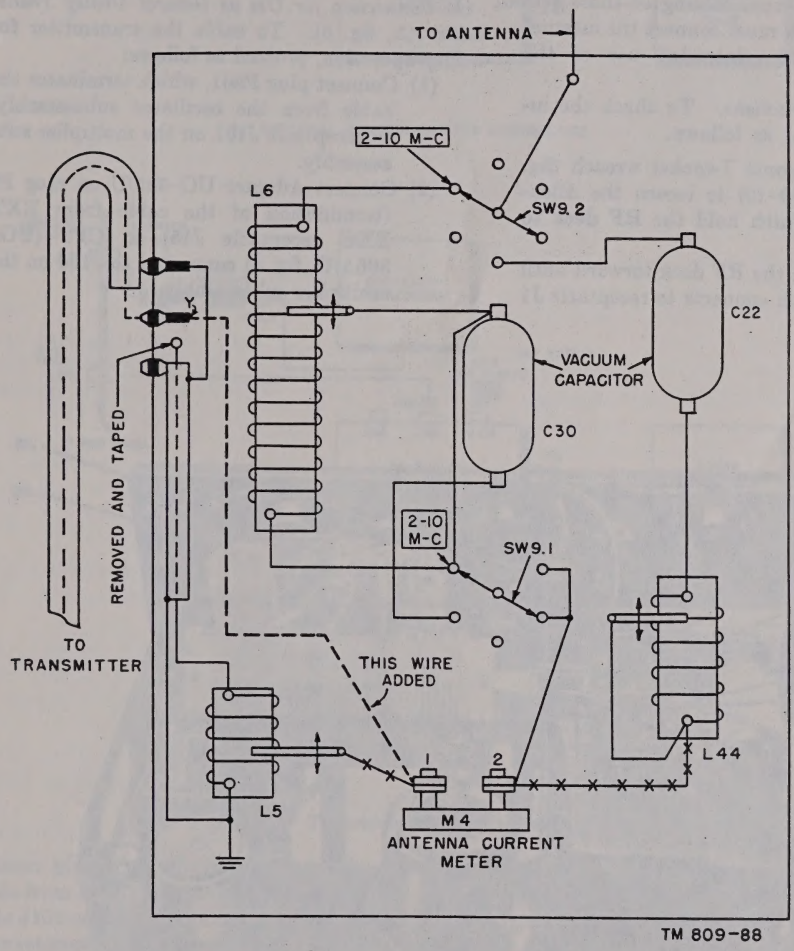


Figure 3. Modified antenna tuning unit, practical wiring diagram.

10. Internal Connections of Oscillator and Multiplier Subassemblies

(figs. 4 and 5)

Lettered models of the transmitter can function in combination with Radio Modulator MD–239/GR (an fsk modulator) or as general utility transmitters. Special RF cable adapters have been added to the internal cabling of these sets and installing personnel must connect the internal cables according to the intended use of the transmitter.

a. Preliminary Instructions. To check the internal cabling, proceed as follows:

(1) Use the hexagonal T-socket wrench (fig. 4, TM 11–809–10) to loosen the Allen-head bolts which hold the RF deck to the cabinet.

(2) Carefully pull the RF deck forward until plug P1, which connects to receptacle J1 (fig. 4), is accessible, and disconnect P1 from J1.

Caution: The RF deck is quite heavy and is not equipped with stops; be careful to pull directly out so as not to smash tube V1 against the upper housing.

(3) Place the RF deck on a bench or other flat surface.

b. Connection for Use as General Utility Transmitter (A, fig. 5). To cable the transmitter for utility operation, proceed as follows:

(1) Connect plug P801, which terminates the cable from the oscillator subassembly, to receptacle J101 on the multiplier subassembly.

(2) Connect Adapter UG–635/U on plug P9 (termination of the cable from EXT EXC receptacle J15) to CP2 (UG–306A/U, fig. 4) connected to J104 on the multiplier subassembly.

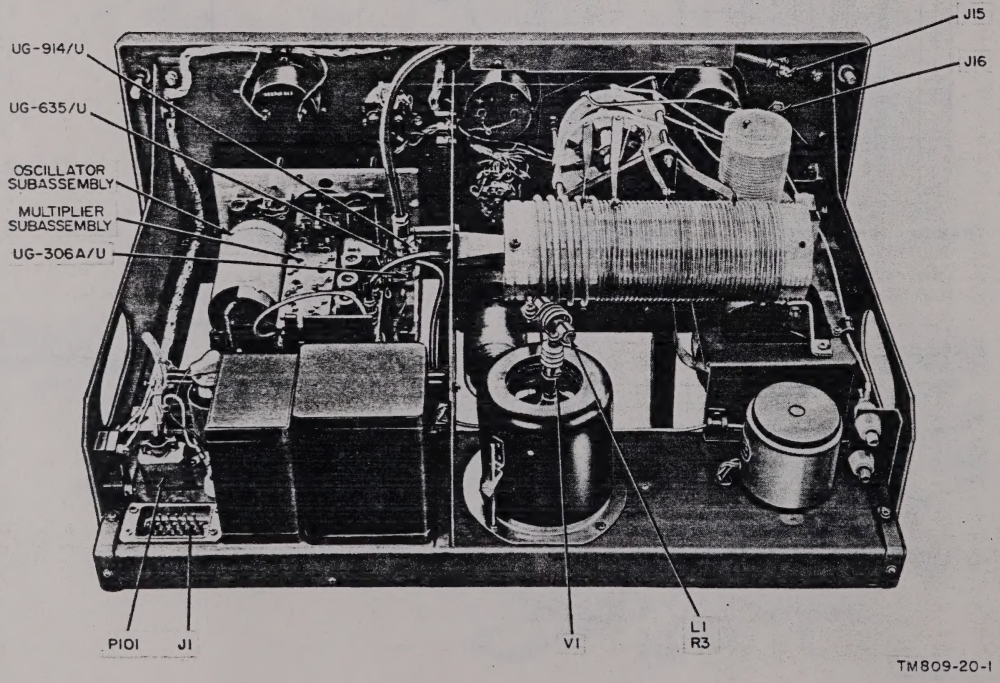
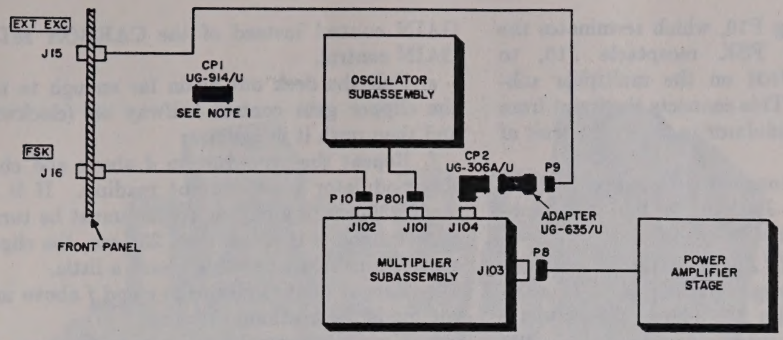
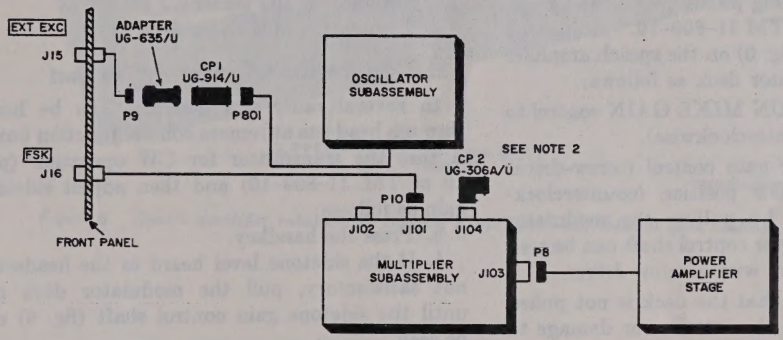


Figure 4. Radio Transmitter T–368C/URT, RF deck, top view.



A. INTERNAL CONNECTIONS FOR GENERAL USE



B. INTERNAL CONNECTIONS FOR USE WITH RADIO MODULATOR MD-239/GR

NOTES:

1. CONNECTOR ADAPTER UG-914/U IS NOT USED BUT LEFT CLIPPED IN PLACE.
2. CONNECTOR ADAPTER UG-306A/U IS NOT USED BUT LEFT CONNECTED TO J104.

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Figure 5. Transmitter internal connections.

(3) Connect plug P10, which terminates the cable from FSK receptacle J16, to receptacle J102 on the multiplier subassembly.

(4) Connector-adapter CP1 (UG–914/U, fig. 4) located in the holder mounted on the side panel is not used.

c. Connections for Use With Radio Modulator MD–239/GR (B, fig. 5). To cable the transmitter for use with Radio Modulator MD–239/GR, proceed as follows:

(1) Connect plug P801 from the oscillator subassembly to connector-adapter CP1 (UG–914/U).

(2) Connect plug P9 (terminated by Adapter UG–635/U) from the EXT EXC receptacle cable to the other end of CP1 (UG–914/U). This connects the output signal from the first buffer stage to the EXT EXC jack.

(3) Connect plug P10, which terminates the cable from FSK receptacle J16, to receptacle J101 on the multiplier subassembly. This connects the input from the radio modulator to the grid circuit of V101.

(4) Right angle connector-adapter CP2 (UG–306A/U) on J104 of the multiplier subassembly is not used.

d. Replacement of RF Deck. After internal connections have been properly made to operate the transmitter with Radio Modulator MD–239/GR or as a general utility transmitter, replace the RF deck. Connect P1 to J1 and fasten the RF deck in place.

11. Clipper Gain Control Adjustment

Follow the AM tuning procedures of paragraph 17*b*(1) through (3) in TM 11–809–10. Adjust the clipper gain control (fig. 6) on the speech amplifier chassis on the modulator deck as follows:

a. Turn the CARBON MIKE GAIN control to its OFF position (counterclockwise).

b. Turn the clipper gain control (screw-driver adjustment) to its OFF position (counterclockwise). This is done by pulling the modulator deck out until the clipper control shaft can be seen and turning the control with a screw driver.

Warning: Be sure that the deck is not pulled out too far; injury to the installer or damage to the equipment may result because there are no stops to prevent the deck from falling out of the housing.

c. Push the deck back into the housing but do not tighten the bolts at this time.

d. Hold the microphone in one hand (approximately 4 inches to 6 inches from the face) and press the mike switch. Hum or whistle a sustaining note into the mouthpiece while turning up the CARBON MIKE GAIN control until approximately 250 milliamperes (ma) is read on the EXCITATION meter. If a telephone is used over a 600-ohm line, turn the 600 OHM LINE GAIN control instead of the CARBON MIKE GAIN control.

e. Pull the deck out again far enough to turn the clipper gain control halfway on (clockwise) and then push it in again.

f. Repeat the procedure in *d* above and check the modulator plate current reading. If it exceeds 230 ma, the clipper control must be turned on more and if it is less than 230 ma, the clipper control must then be turned back a little.

g. Repeat the procedures in *e* and *f* above until 230 ma is the maximum reading.

h. Now talk normally into the microphone and check for a maximum reading of 230 ma on the EXCITATION meter. If 230 ma is not exceeded on peaks, the transmitter is adjusted for 100 percent modulation with peak clipping control for modulation over 100 percent.

i. Tighten the modulator deck bolts.

12. Sidetone Gain Control Adjustment

In several radio sets, sidetone can be heard through headsets at remote control junction boxes. Adjust the transmitter for CW operation (par. 19 of TM 11–809–10) and then adjust sidetone gain as follows:

a. Press the handkey.

b. If the sidetone level heard in the headset is not satisfactory, pull the modulator deck out until the sidetone gain control shaft (fig. 6) can be seen.

c. With a screwdriver, turn the shaft clockwise to increase, or counterclockwise to decrease, the signal level.

Warning: Do not pull the deck out too far; there are no stops to prevent the deck from falling out. Injury to the installer or damage to the equipment may result.

d. Push the deck back into the housing, and press the handkey again to check sidetone level in the headset.

e. Repeat the procedures of *c* and *d* above until the sidetone level as heard in the headset is comfortable for the operator.

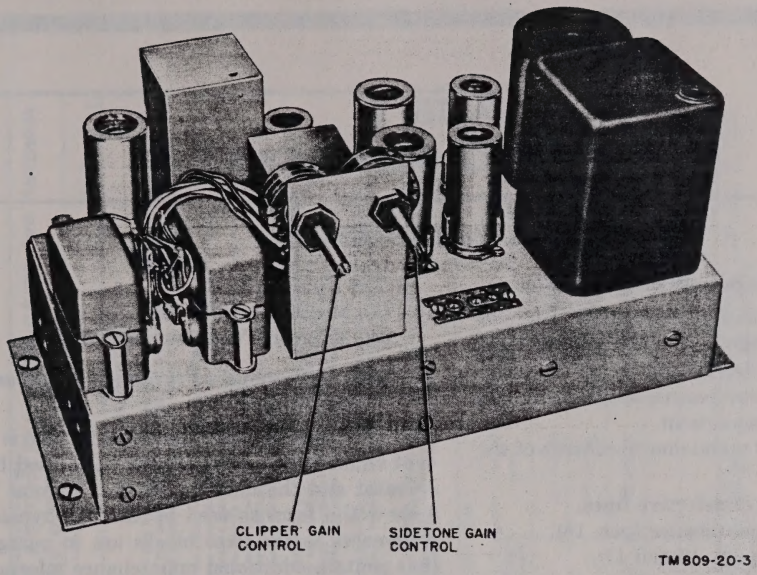

Figure 6. Speech amplifier subassembly showing clipper gain and sidetone gain controls

CHAPTER 3
MAINTENANCE INSTRUCTIONS

Section I. MAINTENANCE

13. Scope of Unit Repairman's Maintenance

a. Following is a list of maintenance duties performed by the unit repairman. The scope of these instructions has been determined by the available tools, materials, test equipment, spare parts, and the MOS of the unit repairman.

b. Unit repairman's maintenance consists of the following:

(1) Replacement of defective fuses.
(2) Preventive maintenance (par. 15).
(3) Lubrication (pars. 16 and 17).
(4) Visual inspection (par. 18).
(5) Trouble shooting (par. 19).
(6) Tube testing (par. 20).

14. Tools, Materials, and Test Equipment Required

The tools, materials and test equipment required for unit repairman's maintenance are listed below.

a. Tools.

(1) Three Allen wrenches (No. 4, 6, and 8) mounted on the RF deck metal partition.
(2) A ⅜-inch hexagonal T-socket wrench (fig. 4, TM 11–809–10).
(3) Tool Equipment TE–41.
(4) Test prod (stock No. 3F3705–12–19).

b. Materials.

(1) Cleaning Compound (Federal stock No. 7930–395–9542).
(2) Cleaning cloth.
(3) Fine sandpaper.
(4) Grease, aircraft and instruments (GL), MIL–G–3278.
(5) Lubricating oil, general purpose, preservative (PL special), MIL–L–644A.

c. Test Equipment.

(1) Multimeter ME–77/U.
(2) Electron Tube Test Set TV–7/U.

15. Unit Repairman's Preventive Maintenance (figs. 7 and 8)

a. DA Form 11–238. DA Form 11–238 is a preventive maintenance check list to be used by the operator and the unit repairman. Figures 7 and 8 show the form as used by the unit repairman. References in the item blocks are to paragraphs that contain additional maintenance information. Items not applicable to the transmitter and antenna tuning unit are lined out. Instructions for use appear on the form.

b. Items. The information shown in this subparagraph is supplementary to DA Form 11–238. The item numbers correspond to item numbers on the form.

Item	Maintenance procedures
11----	Clean air filters as follows: *a.* Use the blowers to blow out dust. *b.* Pour cleaning compound over a filter. Place a large basin under the filter to catch the compound. After the dirt particles settle, the clear liquid can be used again. *c.* Use a light water spray to flush out the loosened dirt. *d.* After the filter is dry, spray light oil sparingly on the side of the filter that faces the flow of air.
19----	Inspect, tighten, and lubricate the couplings and control shafts in the antenna tuning unit. Check gears of oscillator-multiplier and power amplifier tuning drive assemblies for wear or chipping.

ADDITIONAL ITEMS FOR 2D AND 3D ECHELON INSPECTIONS	CONDITION
26. [illegible]	
27. CHECK FOR NORMAL OPERATION.	V
28. [illegible]	

IF DEFICIENCIES NOTED ARE NOT CORRECTED DURING THE INSPECTION, INDICATE ACTION TAKEN FOR CORRECTION.

ITEM 7 - CORD CD-763 (POWER CABLE) FRAYED. REPORTED TO 2D ECHELON MAINTENANCE FOR REPAIR. (REPLACED CORD 18FEB, M/SGT R. DOUGLAS)

4

MAINTENANCE CHECK LIST FOR SIGNAL EQUIPMENT
SOUND EQUIPMENT, RADIO, DIRECTION FINDING RADAR, CARRIER, RADIOSONDE AND TELEVISION
(AR 750-625)

EQUIPMENT NOMENCLATURE: RADIO TRANSMITTER T-368 C/URT AND ANTENNA TUNING UNIT BC-939-B

EQUIPMENT SERIAL NUMBER: 427 610

FOLD

INSTRUCTIONS

This form may be used for a period of one month by using the correct dates and weeks of the month. It is to be used as a Preventive Maintenance check list for Signal equipment in actual use, or for a check on equipment prior to issue.

1. For detailed Preventive Maintenance instructions see:
   a. The Technical Manual *(in TM 11 series)* for the equipment. *(See DA Pamphlet Number 310-4)*
   b. The Supply Bulletin *(SB 11-100 series)* for the equipment. *(See DA Pamphlet Number 310-4)*
   c. The Department of the Army Lubrication Order. *(See DA Pamphlet Number 310-4)*

2. The following action will be taken by either the Communications Officer/ Chief for 1st echelon, or the Inspector for higher echelon:
   a. Enter Equipment Nomenclature and Serial Number.
   b. Strike out items that do not apply to the equipment.

3. Operator/Inspector will enter in the columns entitled CONDITION, on the proper line, a notation regarding the condition, using symbols specified under LEGEND.

4. After operator completes each daily inspection he will initial over the appropriate dates under "Daily Condition for Month", then return form to his supervisor.

TYPE OF INSPECTION

OPERATOR	2/3 ECHELON	DATE	SIGNATURE
V		10FEB	Cpl Roy B. Barrie
V		17FEB	Cpl Roy B. Barrie
	V	18FEB	M/Sgt Rodyp Douglas

DA FORM 1 MAY 57 11-238

REPLACES DA FORMS 11-238, 1 NOV 55; 11-239, 11-244, 11-245, 11-246, 11-249, 11-280, AND 11-281; WHICH ARE OBSOLETE.

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Figure 7. DA Form 11-238 as used by the unit repairman, pages 1 and 4.

LEGEND for marking conditions:
Satisfactory, ✓.
Adjustment, Repair or Replacement required, X.
Defect corrected, (X).

DAILY CONDITION FOR MONTH OF

NO.	DAILY ITEM	1 RD 17	2 RD 18	3 RD 19	4 RD 20	5 RD 21	6 OD 22	7 RD 23	8 RD 24	9 RD 25	10 RD 26	11 RD 27	12 RD 28	13 OD 29	14 OD 30	15 31	16	2D 3D ECHELON
1.	COMPLETENESS AND GENERAL CONDITION OF EQUIPMENT. *(Transmitter, [illegible], sampling cords, wire, cables, microphones, tubes, spare parts, technical manuals).*	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			RD
2.	CLEAN DIRT AND MOISTURE FROM [illegible], MICROPHONES, HEADSETS, KEYS, JACKS, PLUGS, COMPONENT PANELS.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			RD
3.	INSPECT CONTROLS FOR NORMAL OPERATION. [illegible]	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			RD
4.	CHECK FOR NORMAL OPERATION OF EQUIPMENT. BE ALERT FOR UNUSUAL OPERATION OR CONDITION.	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			RD

WEEKLY	CONDITION EACH WEEK 1ST	2D	3D	4TH	5TH	2D 3D ECH
5. CLEAN [illegible] EXTERIORS OF CASES, RACKS, MOUNTS, [illegible].	✓	✓				RD
6. INSPECT [illegible] MOUNTS, [illegible] AND EXPOSED METAL SURFACES FOR RUST, CORROSION.	✓	✓				RD
7. INSPECT CORDS, CABLE, [illegible] SHOCK MOUNTS FOR CUTS, KINKS, BREAKS, FRAYING, UNDUE STRAIN.	X	(X)				RD
8. [illegible]						
9. [illegible]						
10. INSPECT ACCESSIBLE ITEMS FOR LOOSENESS: SWITCHES, KNOBS, JACKS, CONNECTORS, [illegible], TRANSFORMERS, [illegible], PILOT LIGHTS, [illegible], ETC.	✓	✓				RD
11. CLEAN AND/OR INSPECT AIR FILTERS, BRASS NAME PLATES, DIAL AND METER WINDOWS. PAR. 15b	✓	✓				RD
12. [illegible]						

ADDITIONAL ITEMS FOR 2D AND 3D ECHELON INSPECTIONS	CONDITION
13. [illegible]	
14. [illegible]	

ADDITIONAL ITEMS FOR 2D AND 3D ECHELON INSPECTIONS	CONDITION
15. INSPECT SEATING OF READILY ACCESSIBLE PLUCK-OUT ITEMS: TUBES, LAMPS, FUSES, [illegible], CONNECTORS, [illegible].	✓
16. INSPECT RELAYS AND CIRCUIT BREAKERS FOR LOOSE MOUNTINGS, BAD CONTACTS, MIS-ALINEMENT OF CONTACTS AND SPRINGS, PROPER SPRING TENSION.	(X)
17. [illegible]	✓
18. INSPECT RESISTORS, BUSHINGS AND INSULATORS FOR CRACKS, CHIPPING, BLISTERING, MOISTURE, DISCOLORATION.	✓
19. CLEAN AND TIGHTEN SWITCHES, TERMINAL BLOCKS, BLOWERS, RELAY CASES AND INTERIORS OF CHASSIS AND CABINETS NOT READILY ACCESSIBLE. PAR. 15b	✓
20. INSPECT TERMINAL BLOCKS FOR LOOSE CONNECTIONS, CRACKS AND BREAKS.	✓
21. INSPECT TERMINALS OF LARGE FIXED CAPACITORS AND RESISTORS FOR DIRT, CORROSION, LOOSE CONTACTS.	✓
22. INSPECT TRANSFORMERS, CHOKES, POTENTIOMETERS AND RHEOSTATS FOR OVERHEATING AND OIL LEAKAGE.	✓
23. [illegible]	
24. [illegible]	
25. [illegible]	

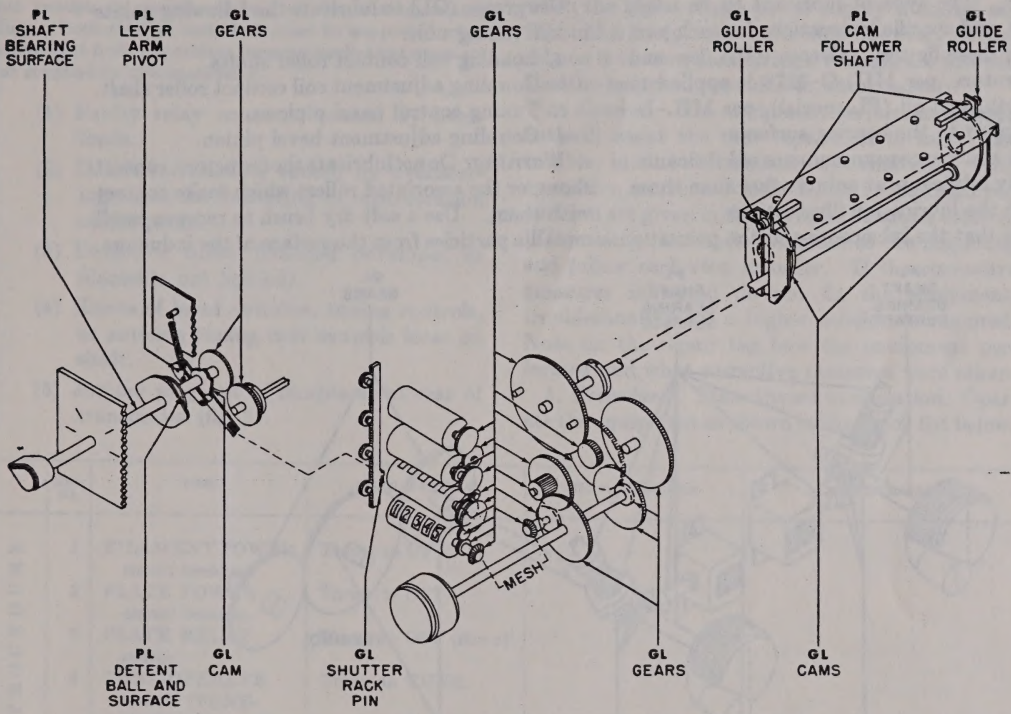
CONTINUED ON PAGE 4

2 3

GPO: 1957 O—427034

TM809-20-5

Figure 8. DA Form 11-238 as used by the unit repairman, pages 2 and 3.



LUBRICANTS	INTERVAL
GL - GREASE, AIRCRAFT AND INSTRUMENT (LOW AND HIGH TEMPERATURE), PER MIL-G-3278.	6 MONTHS
PL - LUBRICATING OIL, PRESERVATIVE, PER MIL-L-644A WITH AMEND. 1.	

TM809-20-16

Figure 9. Lubrication of oscillator-multiplier tuning drive assembly.

16. Lubrication of Oscillator-Multiplier Assembly and Power Amplifier Tuning Drive Assembly

(figs. 9 and 10)

a. The lubrication instructions for the oscillator-multiplier tuning drive assembly are given in figure 9. The power amplifier tuning (and loading) drive assembly lubrication instructions are given in figure 10. The type of lubricant to be used, the interval, and specific instructions for each part are given in these figures. Grease (GL), low and high temperature, per MIL–G–3278 is applied to the gear teeth; and oil (PL special), per MIL–L–644A, is applied to the bearing surfaces.

b. Do not apply excessive amounts of lubricants. Do not apply lubricants at points other than those indicated on the lubrication illustrations.

c. Be sure that the lubricants and the points to be lubricated are clean and free from sand, grit, or dirt. These abrasives are the primary cause of bearing wear. Use cleaning compound to clean all parts. Before lubrication, clean all surfaces to be lubricated. Use a lint-free cloth dampened with cleaning compound. Keep the fluid off surrounding parts.

17. Lubrication of Antenna Tuning Unit

Use grease (GL) to lubricate the following points in the tuning unit:

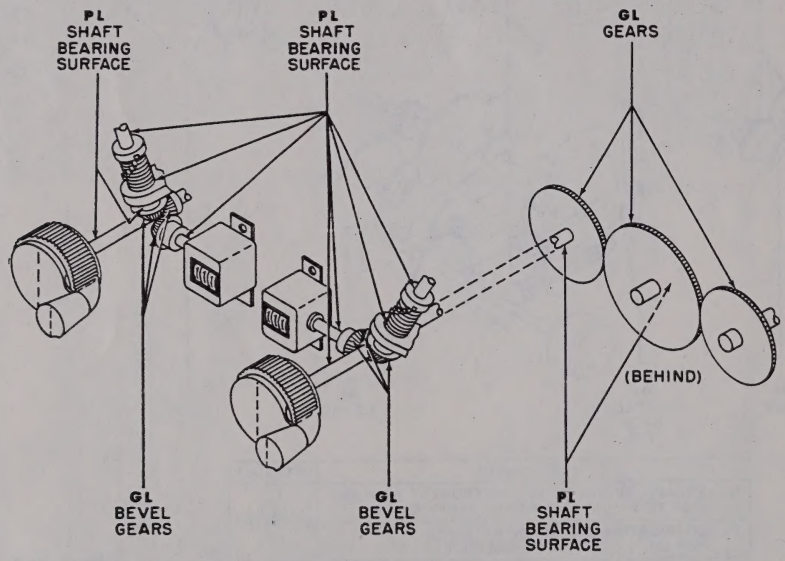
a. Loading coil contact roller shafts.

b. Coupling adjustment coil contact roller shaft.

c. Tuning control bevel pinions.

d. Coupling adjustment bevel pinion.

Warning: Do *not* lubricate the inductors, contact shoes, or the associated rollers which make contact with them. Use a soft dry brush to remove small metallic particles from the surface of the inductors.



LUBRICANTS	INTERVAL
GL–GREASE, AIRCRAFT AND INSTRUMENT (LOW AND HIGH TEMPERATURE), PER MIL-G-3278.	6 MONTHS
PL–LUBRICATING OIL, PRESERVATIVE, PER MIL-L-644A WITH AMEND. I.	

TM809-20-15

Figure 10. Lubrication of power amplifier tuning drive assembly.

Section II. TROUBLESHOOTING

18. Visual Inspection

Before operating the equipment, inspect it. This will save repair time and may also avoid further damage to the transmitter.

a. Complete failure of the transmitter often may be caused by one or more of the following faults:

(1) Improperly connected power cord.

(2) Worn, broken, or disconnected cords or plugs.

(3) Blown fuses or tripped circuit breaker.

(4) Switches (or other controls) set incorrectly.

b. Partial failure of the transmitter often may be caused by one or more of the following faults:

Note. The individual decks (RF, modulator, and power supply) of the transmitter may be completely removed for servicing. To prevent damage to the wiring be *sure* that no deck is pulled out of the cabinet any farther than just enough to permit removal of the interconnecting plugs. Both sides of each deck must be supported when removing it from the cabinet because mechanical stops are not supplied on this equipment.

(1) Faulty relay contacts, caused by overloads.

(2) Defective resistors, caused by overheating; look for blistering or discoloration of the paint.

(3) Defective tubes (cracked envelopes or filaments not lighted).

(4) Knobs of band switches, tuning controls, or antenna tuning unit controls loose on shaft.

(5) Jumper plug out of receptacle at rear of transmitter (fig. 2).

19. Troubleshooting by Using Equipment Performance Check List

(figs. 11–20)

Caution: Radio Transmitter T–368(*)/URT contains extremely high voltages which are dangerous to life if contacted. The protective electrical interlock switches should not be relied upon. A red pilot lamp, labeled PLATE POWER, on the front panel of the transmitter indicates when the high-voltage power supply is turned on. Since this lamp may burn out, however, do not rely on it to show that no high voltages are present. Use the test prod provided to insure safety.

a. General. The equipment performance check list will assist the unit repairman to locate the trouble in the transmitter systematically. All corrective measures which the unit repairman can perform are given in the *corrective measures* column. When using the check list, start at the beginning and follow each step in order. If the corrective measures indicated do not fix the equipment, troubleshooting by a higher echelon is required. Note on the repair tag how the equipment performed and what corrective measures were taken.

b. Procedure. Place the set in operation. Operate the equipment as shown in the check list below.

	Item No.	Item	Action or condition	Normal indications	Corrective measures
PRELIMINARY STARTING PROCEDURE	1	FILAMENT POWER circuit breaker.	Throw to OFF.		
	2	PLATE POWER circuit breaker.	Throw to OFF.		
	3	PLATE RELAY switch.	Throw to OFF (down).		
	4	TUNE-OPERATE switch (TUNE-NORMAL switch in A and C models).	Throw to TUNE.		
	5	EXCITER PLATE POWER switch (basic model). KEYING switch (lettered models).	Throw to OFF. Set to NORMAL.		
	6	BAND SELECTOR switch.	Turn to desired band.	Proper bar exposed on dial and pointer set at desired band.	Secure knob to shaft. Check switch.
	7	TUNING CONTROL	Turn to desired operating frequency.	Proper number in mc appears.	Higher echelon repair required.
	8	P A BAND SWITCH.	Turned to desired band.	Pointer at desired band.	Secure knob to shaft. Check switch.
	9	POWER AMPLIFIER TUNING and POWER AMPLIFIER LOADING controls.	Settings found from calibration charts for desired frequency.	Numbers rotate to proper settings.	Higher echelon repair required.

Item No.	Item	Action or condition	Normal indications	Corrective measures
10	SERVICE SELECTOR switch.	Turn to CW	Pointer at type of service selected.	Secure knob to shaft. Check switch.
11	EXCITATION METER SWITCH. *When using antenna Tuning Unit BC–939–B.*	Place at P A GRID X2 position.	Pointer at desired meter range.	Secure knob to shaft. Check switch.
12	Range switch	Set to desired range	Pointer at desired range.	Secure knob shaft. Check switch.
13	FREQUENCY control	Crank to desired setting found from calibration charts.	Numbers rotate to proper setting.	Higher echelon repair required.
14	COUPLING control	Turn to desired setting found from calibration charts.	Numbers rotate to proper setting.	Secure knob to shaft. Higher echelon repair required.
15	FILAMENT POWER circuit breaker.	Throw to ON. Adjust FILAMENT VOLTAGE control for 5-volt reading on FIL VOLTAGE meter.	Green light on. Blowers go on. A 5-volt reading on FIL VOLTAGE meter.	Check power Cord CD–763 and connectors between ac source and ac power receptacle J14. Check cables to J7 (power supply deck), J6 and J2 (modulator deck), and J1 (RFdeck) and the connectors. Check 6- and 3-ampere fuses (F1 and F2). Check FIL VOLTAGE meter M1 and FILAMENT VOLTAGE control R18. Check blowers B1 and B2 and FILAMENT POWER circuit breaker CB1. Check FILAMENT POWER lamp I 3.
16	FILAMENT POWER circuit breaker.	Throw to OFF	Green light and blowers go off. Reading on FIL VOLTAGE meter drops to zero.	
17	PLATE POWER circuit breaker and PLATE RELAY switch.	Throw to ON (up) positions.		
18	FILAMENT POWER circuit breaker.	Throw to ON	See item 15. Red light goes on approximately 25 seconds after circuit breaker goes on. Also P A PLATE METER shows a low reading.	See item 15. Check PLATE POWER circuit breaker CB2 and red lamp I 4; THERMAL RESET, PLATE RELAY and OVERLOAD RESET switches. Check relays K5, K6, K7, and K8 on power supply deck under protective cover. Check P11 for firm seating in jumper plug receptacle J13. Check high-voltage rectifier tubes V18 and V19 and see that all decks are closed. Check P A PLATE meter M3. Check clamper tube V2.

	Item No.	Item	Action or condition	Normal indications	Corrective measures
PRELIMINARY STARTING PROCEDURE	19	EXCITATION METER SWITCH.	Turn to P A GRID X2 and INT AMP PLATE X10.	No readings on EXCITATION meter.	
	20	EXCITATION METER SWITCH.	Turn to MOD PLATE X20.	Reading (approximately 50 ma) appears on EXCITATION meter.	See item 18. Check modulator tubes V9 and V10 and EXCITATION meter M2. Check bias rectifier tube V11 if reading is excessive.
	21	PLATE POWER circuit breaker and PLATE RELAY switch.	Turn to OFF (down) positions.	Red light goes off and P A PLATE meter reading drops to zero.	
	22	EXCITATION METER SWITCH.	Turn to P A GRID X2.		
	23	EXCITER PLATE POWER switch (basic model). Keying switch (lettered models).	Throw to ON (up)----- Set to CONTINUOUS.	8 ma minimum appears on EXCITATION meter.	Check low-voltage power supply rectifier tubes. Check tubes V801, V802, V101 through V104 in exciter subassembly. Check cable between P101 and J8 on RF deck. Check internal cabling for proper connections (par. 10). Check slow release relay K9 and KEYING switch S6 (lettered models only).
	24	EXCITATION METER SWITCH.	Turn to INT AMP PLATE X10.	20 to 70 ma reading on EXCITATION meter.	See item 23.
EQUIPMENT PERFORMANCE		*CW operation*			
	25	SERVICE SELECTOR switch.	Turn to CW.		
	26	EXCITER PLATE power (basic model). KEYING switch (lettered models).	Turn to ON (up) position. Set to CONTINUOUS.		
	27	PLATE POWER circuit breaker and PLATE RELAY switch.	Turn to ON (up) position.	Readings on P A PLATE and EXCITATION meter.	
	28	POWER AMPLIFIER TUNING control.	Adjust for resonance---	Minimum reading on P A PLATE meter.	Check pa tube V1.
	29	POWER AMPLIFIER LOADING and POWER AMPLIFIER TUNING controls.	Adjust loading control for 150 ma pa plate current. Readjust tuning control for minimum reading on meter. Keep reading 150 ma with loading control.	150 ma on P A PLATE meter.	See item 28.

Item No.	Item	Action or condition	Normal indications	Corrective measures
30	TUNE-OPERATE (TUNE-NORMAL in A and C models) switch.	Throw to OPERATE (NORMAL position in A and C models)	Reading on P A PLATE meter increases to 350 ma (approximately).	Check switch. Check OVERLOAD RESET. Adjust COUPLING control. Adjust FREQUENCY control. Check R. F. OUTPUT receptacle J9.
31	ANTENNA CURRENT.	Key held closed	ANTENNA CURRENT meter indication.	Check control settings, tuning, coupling, and antenna range switch. Check handkey.
32	EXCITER PLATE POWER switch (basic model).	Throw to OFF	Equipment ready for cw transmission.	
	KEYING switch (lettered models).	Throw to NORMAL.		
	AM operation			
33	SERVICE SELECTOR switch.	Turn to AM.		
34	EXCITATION METER switch.	Set at P A GRID X2.		
35	TUNE-OPERATE switch (TUNE-NORMAL in A and C models).	Set to TUNE position.		
36	KEYING switch (lettered models).	Set to CONTINUOUS.	Reading on EXCITATION meter (P A GRID X2 position).	See item 23.
	EXCITER PLATE POWER switch (basic model).	Turn to ON (up) position.		
37	PLATE POWER circuit breaker and PLATE RELAY switch.	Turn to ON (up) position.	Reading on P A PLATE meter.	
38	POWER AMPLIFIER TUNING control.	See item 28.		
39	POWER AMPLIFIER LOADING control.	See item 29, but adjust for 125 ma pa plate current.		
40	TUNE-OPERATE switch (TUNE-NORMAL in A and C models).	Throw to OPERATE (NORMAL in A and C models).	Reading on P A PLATE meter increases to 275 ma.	See items 30 and 31.
41	EXCITATION METER SWITCH.	Set to MOD PLATE X20.	50 ma on EXCITATION meter.	Check MODULATOR BIAS control R25 and modulator tubes V9 and V10.
42	MODULATOR BIAS control.	Adjust control for 50 ma modulator plate current.	See item 41	See item 41.
43	EXCITER PLATE POWER (KEYING switch in lettered models) and PLATE RELAY switches.	Throw to OFF (down) (KEYING switch to NORMAL in lettered models).	No readings on P A PLATE and EXCITATION meters.	Check switches.

	Item No.	Item	Action or condition	Normal indications	Corrective measures
EQUIPMENT PERFORMANCE	44	Carbon microphone and mike switch.	Adjust for 100 percent modulation (par. 11).	230 ma (max) on EXCITATION meter.	Check mike and mike switch. Check input (J11 and P4). Test speech amplifier tubes V12, 13, 14 and 15. Inspect cable and contacts of J3. Check SERVICE SELECTOR switch.
	45	Telephone	See item 44	See item 44	See item 44 and check also telephone and telephone input (J12 and P5).
		EXT EXC operation			
	46	SERVICE SELECTOR switch.	Turn to EXT EXC.		
	47	EXCITATION METER SWITCH.	Turn to P A GRID X2.		
	48	KEYING switch (EXCITER PLATE POWER switch in basic model).	Set to CONTINUOUS (EXCITER PLATE POWER switch to ON (up) position).		
	49	PLATE POWER circuit breaker and PLATE RELAY switch.	Throw to ON (up) position.		
	50	Apply external excitation input.	Connect to EXT EXC jack.		
	51	TUNING CONTROL	Adjust for max grid current.	Reading on EXCITATION meter between 8 and 12 ma.	Check external excitation relay and signal input. Check internal RF deck connections.
	52	POWER AMPLIFIER LOADING and POWER AMPLIFIER TUNING controls.	See items 28 and 29	See items 28 and 29	See items 28 and 29.
	53	TUNE-OPERATE switch (TUNE-NORMAL in A and C models).	Throw to OPERATE (NORMAL in A and C models).	See item 30. Equipment ready for transmission of external excitation.	See item 30.
		FSK operation			
	54	SERVICE SELECTOR switch. Remainder of check performed as described under EXT EXC operation.	Turn to FSK.		
		FSK-AM operation			
	55	SERVICE SELECTOR switch. Remainder of check performed as described under FSK and AM operation.	Turn to FSK–AM.		
STOP	56	FILAMENT POWER circuit breaker.	Throw to OFF	FILAMENT POWER and PLATE POWER lights go out. No meter readings. Blowers go off.	

20. Tube Testing Techniques

When trouble occurs, check all cabling, connections, and the general condition of the equipment before attempting removal of electron tubes. Try to isolate the trouble to a particular unit or section of the equipment (par. 19*b*). Tube locations for various transmitter models are shown in figures 11 through 20. *Do not discard* tubes merely because the tubes have been used for a specified length of time. Satisfactory operation in a circuit is the final proof of tube quality. The tube in use may work better than a new one.

a. Use of Tube Tester. All tubes except the modulator (type 4D21) and pa tubes (type 4–400A) can be checked in the tube tester. Remove and test only one tube at a time. Discard a tube only if its defect is obvious or if the tube tester shows it to be defective. Do not discard a tube that tests at or just above its minimum test limit on the tube tester. Replace the original tube, or insert a new one if required, before testing the next one.

b. Tube Substitution Method. For the modulator and pa tubes or if a tube tester is not available, check tubes by the tube substitution method.

(1) Replace the suspected tubes, one at a time, with new tubes. If the equipment becomes operative, discard the last tube removed.

(2) Reinsert the remaining original tubes, one at a time, in the original sockets. If equipment failure occurs during this step, discard the last original tube. Do not leave a new tube in a socket if the equipment operates satisfactorily with the original tube.

(3) If tube substitution does not correct the trouble, *reinsert the original tubes in the original sockets* before forwarding the defective equipment for higher echelon repair.

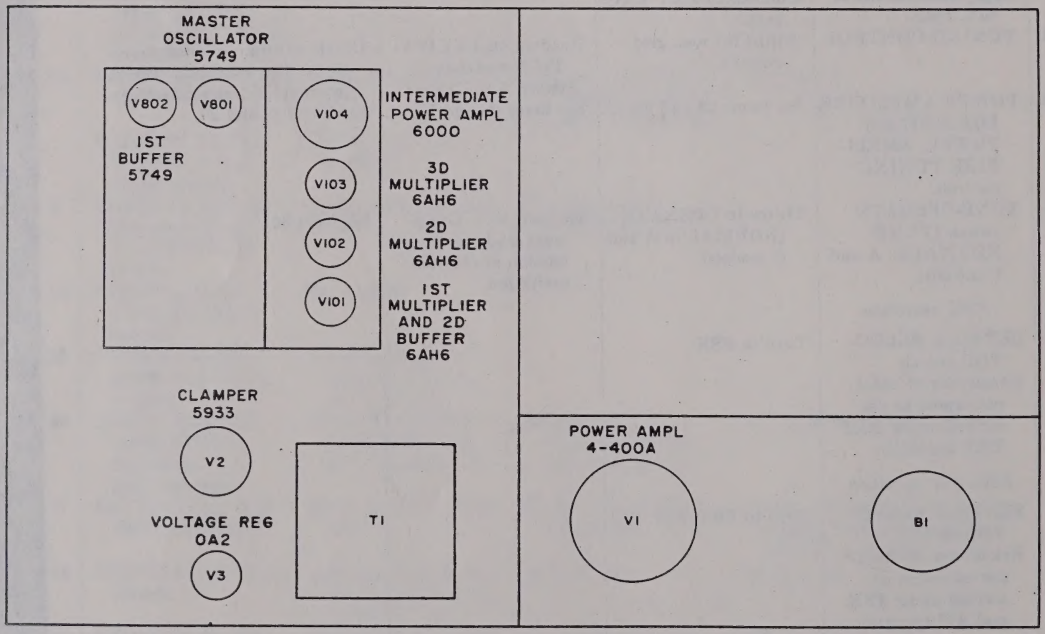


Figure 11. RF deck tube location, basic model.

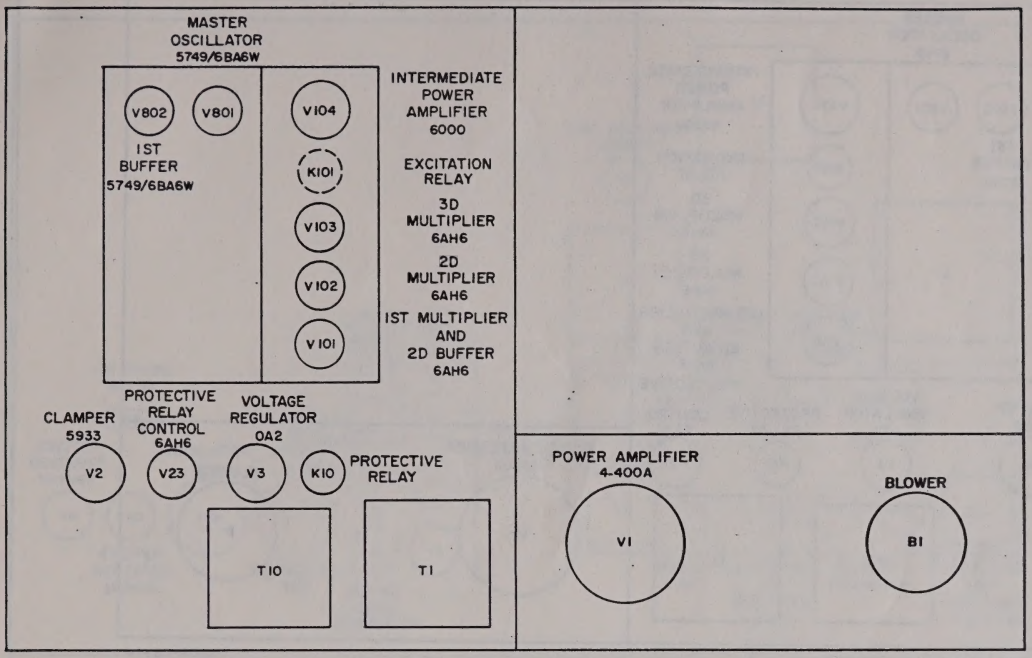


Figure 12. RF deck tube location, A model.

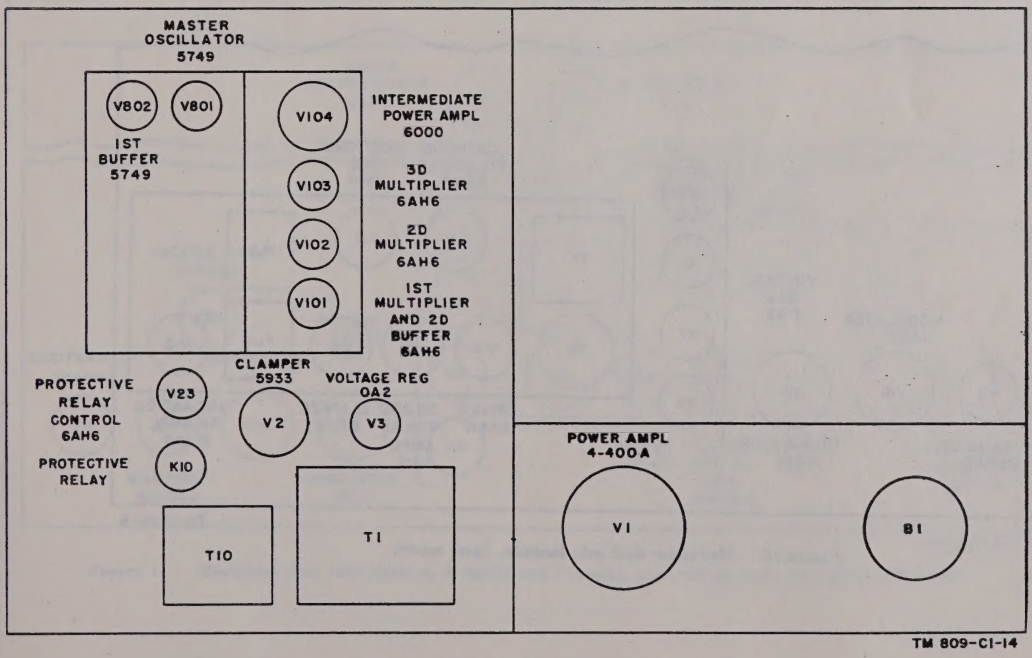


Figure 13. RF deck tube location, B model.

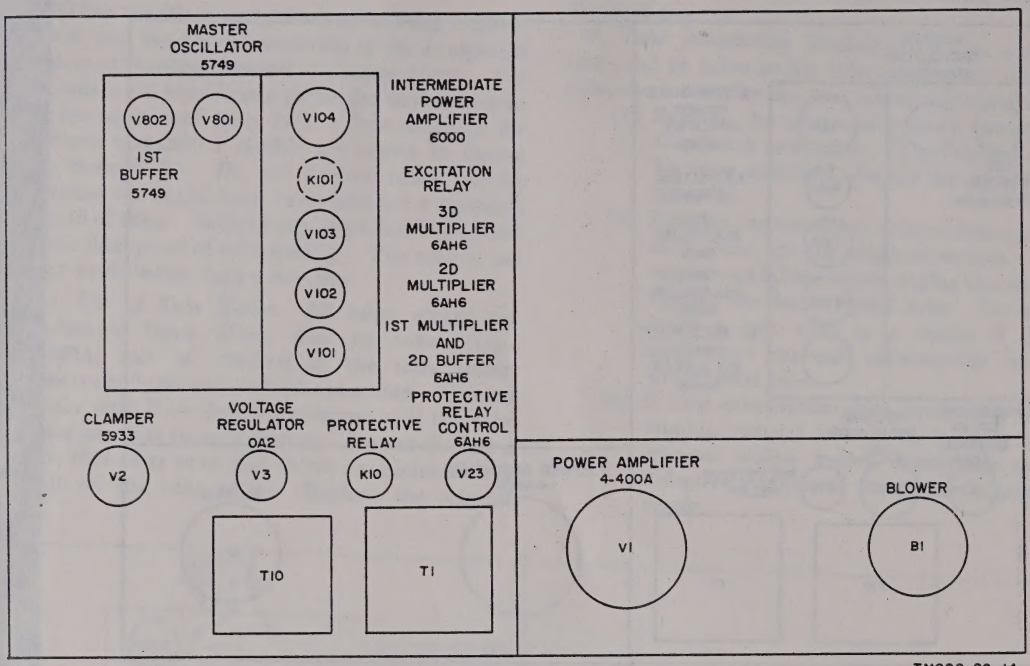


Figure 14. RF deck tube location, C model.

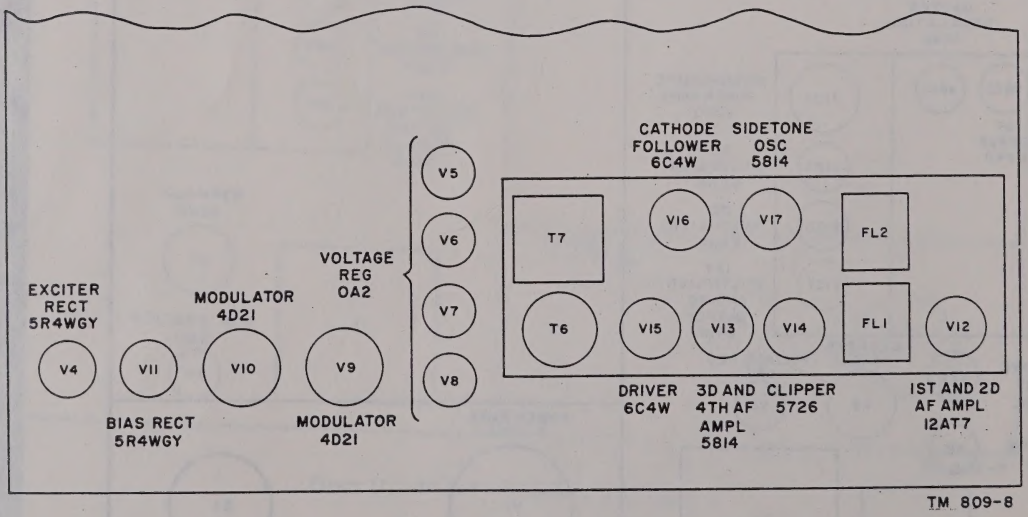


Figure 15. Modulator deck tube location, basic model.

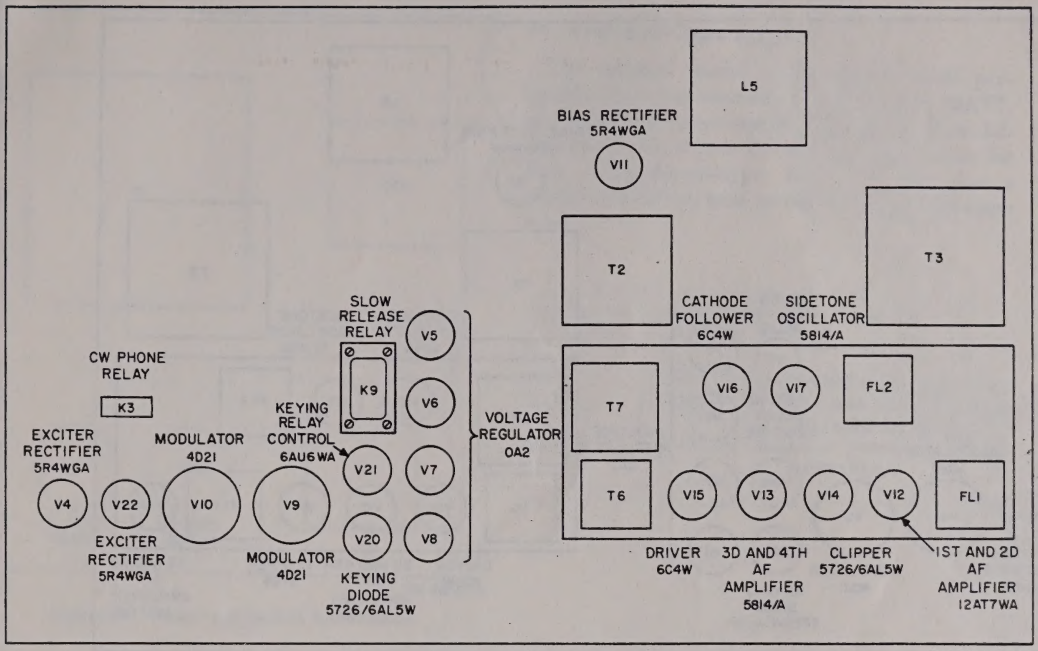


Figure 16. Modulator deck tube location, A model.

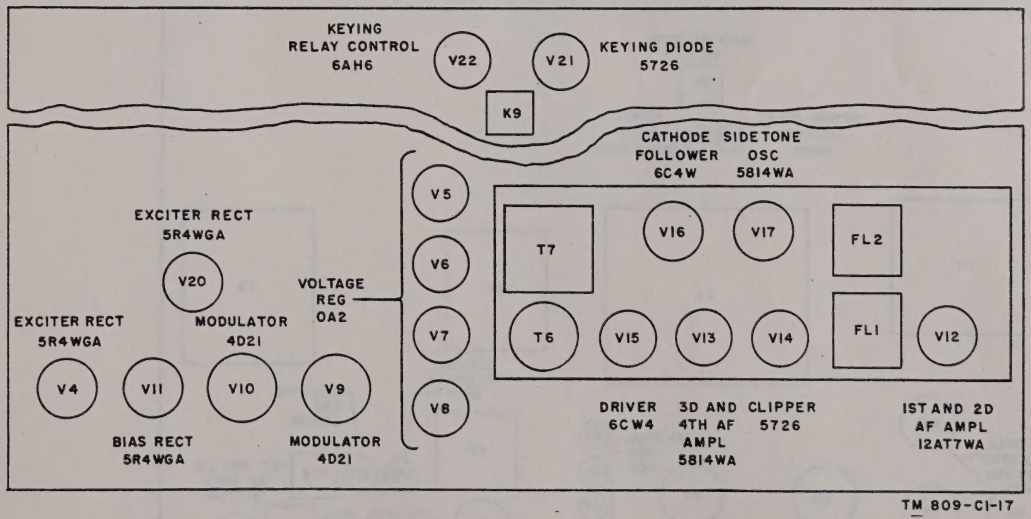
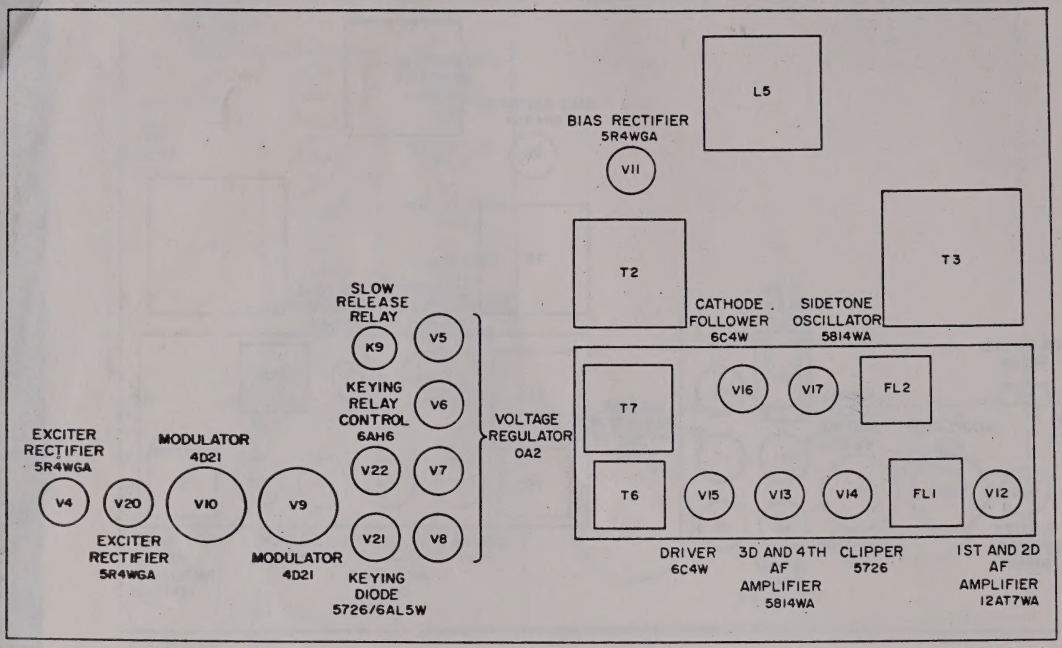
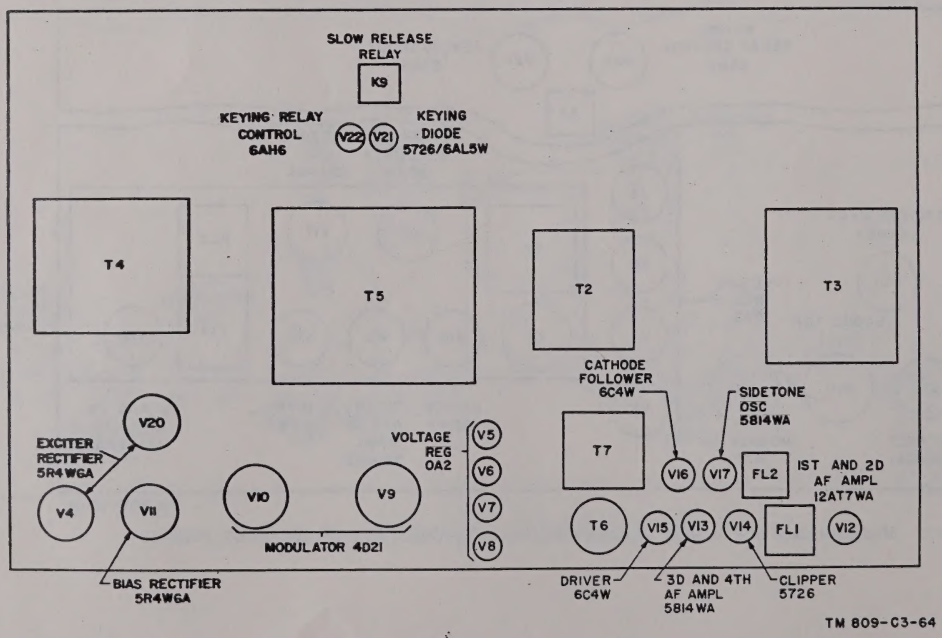


Figure 17. Modulator deck tube location, B model and C model, procured on order No. 43056–Phila–56.



TM809-C2-18

Figure 18. Modulator deck tube location, C model procured on order No. 28459–Phila–55.



TM 809-C3-64

Figure 19. Modulator deck tube location, C model procured on order No. 28597–Phila–55.

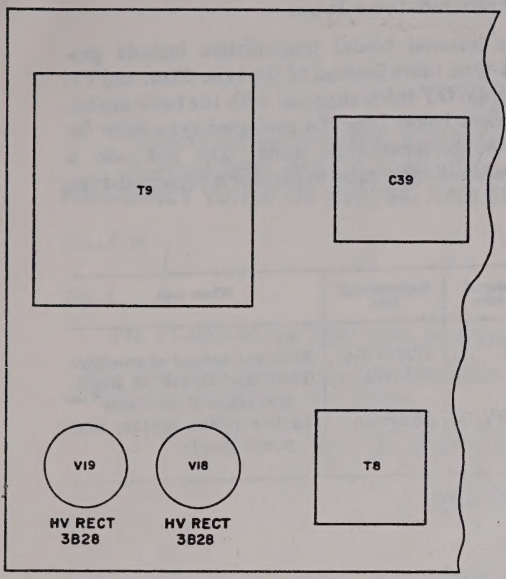


Figure 20. Power supply deck tube location.

21. Preferred-Type Tubes

The lettered model transmitters include preferred-type tubes instead of the type 5814, 12AT7, and 5R4WGY tubes supplied with the basic model. The chart below lists the preferred-type tube for each nonpreferred-type tube. Do not use a nonpreferred-type tube to replace a preferred-type tube.

Nonpreferred-type tube	Preferred-type tube	Where used
12AT7	12AT7WA	First and second af amplifier
5814	5814WA	Third and fourth af amplifier; sidetone oscillator
5R4WGY	5R4WGA	Exciter power supply; bias power supply

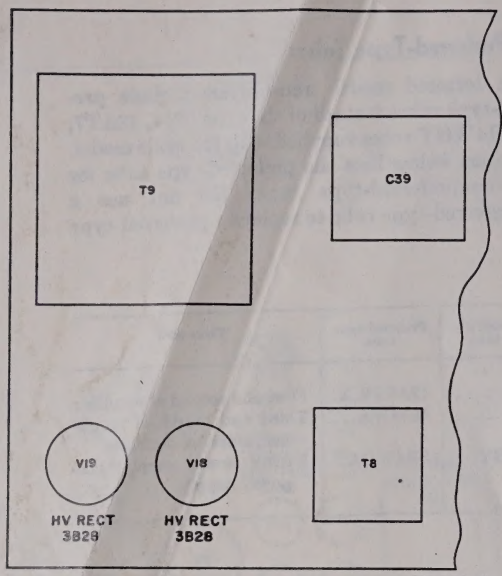


Figure 20. Power supply deck tube location.

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Nonpreferred-type tube	Preferred-type tube	Where used
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5814	5814WA	Third and fourth af amplifier; sidetone oscillator
5R4WGY	5R4WGA	Exciter power supply; bias power supply

TM 11–809–10
C 4

Operator's Manual

RADIO TRANSMITTERS T–368/URT, T–368A/URT, T–368B/URT, T–368C/URT, T–368D/URT, AND T–368E/URT; ANTENNA TUNING UNIT BC–939–B; RADIO FREQUENCY TUNER TN–339/GR; AND STANDING WAVE RATIO-POWER METER ME–165/G

CHANGE
No 4

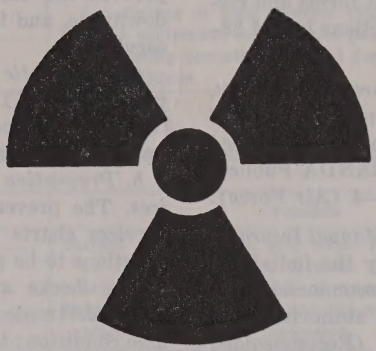
HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., *10 October 1963*

TM 11–809–10, 14 May 1958, is changed as follows:

Note. The parenthetical reference to previous changes (example: "page 1 of C 3") indicates that pertinent material was published in that change.

The following symbol is applicable to this manual:

RADIATION HAZARD



STD–RW–2

Ni 63
Co 60
Ra 226
Cs 137
C 14

Tube types OA2 used in the transmitter contain radioactive material. These tubes are potentially hazardous when broken; see qualified medical personnel and the Safety Director if you are exposed to, or cut by, broken tubes. Use extreme care in replacing these tubes and follow safety procedures in their storage and disposal (par. 28.1).

Never place a radioactive tube in your pocket.

Use extreme care not to break radioactive tubes while handling them.

Never remove radioactive tubes from cartons until ready to use them.

Refer to paragraph 28.1 on handling, storage, and disposal of radioactive material.

Page 3. Add paragraph 1.1 after paragraph 1.

1.1. Index of Publications

Refer to the latest DA Pam 310–4 to determine whether there are new editions, changes, or additional publications pertaining to the equipment. Department of the Army Pamphlet No. 310–4 is an index of current technical manuals, technical bulletins, supply bulletins, lubrication orders, and modification work orders available through publications supply channels. The index lists the individual parts (–0, –20, –35P, etc.) and the latest changes to and revisions of each equipment publication.

Delete paragraph 2 (page 1 of C 3) and substitute:

2. Forms and Records

a. Reports of Maintenance and Unsatisfactory Equipment. Use equipment forms and records in accordance with instructions in TM 38–750.

b. Report of Damaged or Improper Shipment. Fill out and forward DD Form 6 (Report of Damaged or Improper Shipment) as prescribed in AR 700–58 (Army), NAVSANDA Publication 378 (Navy), and AFR 71–4 (Air Force).

c. Reporting of Equipment Manual Improvements. The direct reporting by the individual user of errors, omissions, and recommendations for improving this manual is authorized and encouraged. DA Form 2028 (Recommended Changes to DA Technical Manual Parts Lists or Supply Manual 7, 8 or 9) will be used for reporting these improvements. This form will be completed in triplicate using pencil, pen, or typewriter. The original and one copy will be forwarded direct to: Commanding Officer, U.S. Army Electronics Materiel Support Agency, ATTN: SELMS–MP, Fort Monmouth, N. J., 07703. One information copy will be furnished to the individual's immediate supervisor (officer, noncommissioned officer, supervisor, etc.).

Page 33. Delete paragraphs 25 and 26 and substitute:

25. Scope of Maintenance

The maintenance duties assigned to the operator of the equipment are listed below together with a reference to the paragraphs covering the specific maintenance functions. These procedures do not require tools or test equipment.

a. Daily preventive maintenance checks and services (par. 26.2).

b. Weekly preventive maintenance checks and services (par. 26.3).

c. Cleaning (par. 26.4).

d. Replacement of fuse (figs. 3 and 6).

26. Preventive Maintenance

Preventive maintenance is the systematic care, servicing, and inspection of equipment to prevent the occurrence of trouble, to reduce downtime, and to assure that the equipment is serviceable.

a. Systematic Care. The procedures given in paragraphs 26.1 through 27 cover routine systematic care and cleaning essential to proper upkeep and operation of the equipment.

b. Preventive Maintenance Checks and Services. The preventive maintenance checks and services charts (pars. 26.2 and 26.3) outline functions to be performed at specific intervals. These checks and services are to maintain Army electronic equipment in a combat-serviceable condition; that is, in good general (physical) condition and in good operating condition. To assist operators in maintaining combat serviceability, the charts indicate what to check, how to check, and what the normal conditions are; the *references* column lists the illustrations, paragraphs, or manuals that contain supplementary information. If the defect cannot be remedied by the operator, higher echelon maintenance or repair is required. Records and reports of these checks and services must be made in accordance with the requirements set forth in TM 38–750.

Add paragraphs 26.1 through 26.4 after paragraph 26.

26.1. Preventive Maintenance Checks and Services Periods

Preventive maintenance checks and services of the equipment are required daily and weekly. Paragraph 26.2 specifies the checks and services that must be accomplished daily and under the conditions listed below.

a. When the equipment is initially installed.

b. When the equipment is reinstalled after removal for any reason.

c. At least once each week if the equipment is maintained in standby condition.

d. Paragraph 26.3 specifies *additional* checks and services that must be performed each week.

26.2. Daily Preventive Maintenance Checks and Services Chart

Sequence No.	Item	Procedure	References
1	Transmitter, tuning unit, an standing wave ratio-power meter.	Inspect equipment for completeness (fig. 3).	Par. 6 and appx II.
2	Exterior surfaces	Clean exterior surfaces, including panel and meter glass. Check all meter glass and indicator lenses for cracks.	Par. 26.4.
3	Connector	Check tightness of all external connectors (figs. 1, 4, 5, and 6).	
4	Controls and indicators	While making operating checks (item 5), observe that mechanical action of each knob, dial, and switch is smooth and free of external or internal binding, and that there is no excessive looseness. Check meters for sticking or bent pointers (fig. 1).	
5	Operation	Operate equipment according to paragraphs 17 through 24. During operation be alert for any unusual signs or conditions.	Par. 17 through 24 and 28.

26.3 Weekly Preventive Maintenance Checks and Services Chart

Sequence No.	Item	Procedure	References
1	Cables	Inspect cords, cables, and wires for chafed, cracked, or frayed insulation. Replace connectors that are broken, arced, stripped, or worn excessively.	
2	Handles and latches	Inspect handles, latches, and hinges for looseness. Replace or tighten as necessary.	
3	Metal surfaces	Inspect exposed metal surfaces for rust and corrosion. Clean as required.	Par. 26.4.

26.4 Cleaning

Inspect the exterior of the equipment. The exterior surfaces should be clean, and free of dust, dirt, grease, and fungus.

a. Remove dust and loose dirt with a clean soft cloth.

Warning: **Cleaning compound is flammable and its fumes are toxis. Provide adequate ventilation. *Do not* use near a flame.**

b. Remove grease, fungus, and ground-in dirt from the cases; use a cloth dampened (not wet) with Cleaning Compound, FSN 7930–395–9542.

c. Remove dust or dirt from plugs and jacks with a brush.

Caution: **Do not press on the meter face (glass) when cleaning; the meter may become damaged.**

d. Clean the front panels, meters, and control knobs; use a soft clean cloth. If dirt is difficult to remove, dampen the cloth with water;

mild soap may be used for more effective cleaning.

Page 34. Delete figure 19.

Page 35. Delete figure 20.

Page 36. Add paragraph 28.1 after paragraph 28.

28.1. Handling, Storage, and Disposal of Radioactive Material

Follow the procedures for safe handling, storage, and disposal of radioactive materials as directed by TB SIG 225, AR 40–580, and AR 755–380.

Page 38, appendix I (page 5 of C 3). Add the following references after the last reference.

AR 40–580	Medical Service: Control of Hazards to Health from Radioactive Materials.
AR 755–380	Disposal of Supplies and Equipment: Disposal of Unwanted Radioactive Material.
DA Pam 310–4	Index of Technical Manuals, Technical Bulletins, Supply Bulletins, Lubrication Orders, and Modification Work Orders.
TB SIG 225	Radioactive Electron Tube Handling.
TM 38–750	The Army Equipment Record System and Procedures.

BY ORDER OF THE SECRETARY OF THE ARMY:

EARLE G. WHEELER,
General, United States Army,
Chief of Staff.

Official:

J. C. LAMBERT,
Major General, United States Army,
The Adjutant General.

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Sig Dep (OS) (12)
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USA Elct RD Actv, White Sands (13)
USA Elct RD Actv, Ft Huachuca (2)
USA Trans Tml Comd (1)
Army Tml (1)
POE (1)
USAOSA (1)
AMS (1)
WRAMC (1)
AFIP (1)
Army Pic Cen (2)
USA Mbl Spt Cen (1)
USA Elct Mat Agcy (12)
Chicago Proc Dist (1)
USARCARIB Sig Agcy (1)
Sig Fld Maint Shop (3)
Units organized under following TOE
(2 cy ea UNOINDC)
11–7
11–16
11–57
11–97
11–98
11–117
11–155
11–157
11–500 (Tms AA–AC) (4)
11–557
11–587
11–592
11–597
20–45
20–46
32–56
32–67

NG: State AG (3); units — same as active Army except allowance is one copy to each unit.

USAR: None.

For explanation of abbreviations used, see AR 320–50.

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APPENDIX I
REFERENCES

Following is a list of references applicable and available to the unit repairman of Radio Transmitter T–368(*)/URT and Antenna Tuning Unit BC–939–B.

TM 11–264B	Radio Set AN/GRC–26D.
TM 11–621	Radio Set AN/GRC–41.
TM 11–640A	Radio Set AN/GLQ–2.

CHAPTER 4
SHIPMENT AND LIMITED STORAGE

22. Disassembly

When the transmitter and antenna tuning are part of a set, refer to the appropriate manual for specific disassembly instruction. General instructions are given below:

Disconnect and remove any antenna tuning unit that may be on top of the transmitter.

b. Disconnect all cabling to the equipment.

c. If the base is bolted to the floor, remove the bolts.

23. Repackaging for Shipment or Limited Storage

The transmitter and/or the antenna tuning unit may be shipped from the using organization without special packaging. If repackaging is done, the exact procedures depend on the materials available and the conditions under which they are to be shipped. The information concerning the original packaging (par. 3 and fig. 1) can be helpful.